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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KUMAR, PANKAJ

ART UNIT PAPER NUMBER

2631

5

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,164

Applicant(s)

JAKOBSSON, PETER

Examiner

Pankaj Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-12, 25-34 and 36 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 13, 17, 20-24, 35 and 37 is/are rejected.
- 7) ☒ Claim(s) 5 and 14-16, 18-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 6, 35 are rejected under 35 U.S.C. 102(e) as being anticipated by MacNally 6516185.

3. As per claim 1, MacNally teaches a method for adaptively filtering a signal, comprising the steps of: receiving a signal (MacNally fig. 2: 201); processing the signal to produce a first processed signal (MacNally fig. 2: output of 200, 202), the first processed signal including a desired portion and an adjacent portion (MacNally fig. 2: output of 200, 202 has I and Q portions); removing a direct current (DC) offset of the first processed signal to produce a second processed signal (MacNally fig2: output of adder/subtractor and 206); determining filter coefficients (MacNally paragraph 15: "If the amplitude of the baseband signals ever goes outside the increased window limits, then the window reverts back to the inner window limits ...") based on relative signal strengths of the desired portion and the adjacent portion (MacNally fig. 2: gain controller 212 works based on I and Q data and affects filters 204); and low pass filtering the second processed signal utilizing the filter coefficients to produce a third processed signal (MacNally fig. 2: output of 204).

4. As per claim 3, MacNally teaches the method according to Claim 1, wherein said step of removing a direct current (DC) offset of the first processed signal to produce a second processed signal comprises the steps of: storing the first processed signal to produce a stored first processed signal (MacNally fig. 5: 510 has a capacitor which stores); determining a DC level value of the first processed signal (MacNally fig. 5: 516); and subtracting the DC level value from the stored first processed signal to produce the second processed signal (MacNally fig. 2: 206, 208, 214, adder-subtractors).

5. As per claim 6, MacNally teaches the method according to Claim 1, wherein said step of determining is performed at least once per burst in a time division multiple access (TDMA) scheme (MacNally col. 1 line 47).

6. As per claim 35, MacNally teaches a receiver for adaptively filtering a signal, comprising: means for receiving a signal; means for processing the signal to produce a first processed signal, the first processed signal including a desired portion and an adjacent portion; means for removing a direct current (DC) offset of the first processed signal to produce a second processed signal; means for determining filter coefficients based on relative signal strengths of the desired portion and the adjacent portion; and means for low pass filtering the second processed signal utilizing the filter coefficients to produce a third processed signal. (discussed above with respect to the discussion of claim 1 with MacNally)

7. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda 5953380.

8. As per claim 37, Ikeda teaches an apparatus for rejecting an adjacent channel, comprising: an adjacent channel filter (Ikeda fig. 1: 4 with 5), said adjacent channel filter

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receiving a control signal input (Ikeda fig. 1: input into 4 from 19), said adjacent channel filter configured to reject an adjacent channel and to pass a desired channel (Ikeda fig. 1: output of 5 rejecting noise and passing desired signal) responsive to the control signal input (Ikeda fig. 1: 4 is responsive to output of 19); and a control signal determiner, said control signal determiner receiving a signal that includes the adjacent channel and the desired channel (Ikeda fig. 1: 14, 15, 16, 17, 18, 19), said control signal determiner configured to process the signal and to produce the control signal input (Ikeda fig. 1: output of 19), the control signal input based on relative power levels of the adjacent channel and the desired channel (Ikeda fig. 1: output of 19 based on 14 and 15).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 13, 17, 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacNally.

11. As per claim 13, MacNally teaches the apparatus of claim 13 as shown by the discussion of claim 1. What MacNally does not teach is A/D as claimed in claim 13. What MacNally does teach is an A/D in columns 8 and 9. It would have been obvious to one skilled in the art at the time of the invention to modify MacNally to rearrange the A/D described in columns 8-9 and put it in the beginning part of the reception as claimed. One would be motivated to do so since

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MacNally teaches in column 9 that different configurations are possible. Also, it has been held that rearranging parts of an invention requires routine skill in the art.

12. As per claim 17, MacNally teaches the apparatus according to Claim 13, wherein said DC offset part comprises: a DC-level determiner, the DC-level determiner adapted for receiving the digital signal or the derivative thereof as input (MacNally fig. 2: 208, 210) and for producing as output a DC-level value associated with the digital signal or the derivative thereof (MacNally fig. 2: 206, 214), respectively; a memory, the memory adapted for receiving and storing the digital signal or the derivative thereof (MacNally fig. 5: 510 has a capacitor which stores); and at least one subtractor, the at least one subtractor adapted for determining the difference between the digital signal or the derivative thereof and the DC-level value (MacNally fig. 5: 516 has subtraction).

13. As per claim 20, MacNally teaches the apparatus according to Claim 13, wherein the apparatus comprises a homodyne-based receiver (MacNally fig. 2: 200; homodyne receivers translate to a different frequency after amplifying the RF and 200 is down converting after low noise amplification of 201).

14. As per claim 21, MacNally teaches the apparatus according to Claim 13. What MacNally does not teach is wherein the apparatus comprises a mobile terminal operating substantially in accordance with the Global System for Mobile Communications ++ (GSM++) standard. It would have been obvious to one skilled in the art at the time of the invention to modify MacNally to teach GSM++. One would be motivated to do so since MacNally teaches cellular phones in column 1 and some cellular phones are used in accordance with GSM++ standard.

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15. As per claim 22, MacNally teaches the apparatus according to Claim 13. What MacNally does not teach is wherein the apparatus comprises a base station operating substantially in accordance with the Global System for Mobile Communications ++ (GSM++) standard. It would have been obvious to one skilled in the art at the time of the invention to modify MacNally to teach GSM++. One would be motivated to do so since MacNally teaches cellular phones in column 1 and cellular phones need base stations and some of these cellular phone base station systems are used in accordance with GSM++ standard.

16. As per claim 23, MacNally teaches the apparatus according to Claim 13. What MacNally does not teach is wherein the filter control signal comprises a plurality of filter coefficients. It would have been obvious to one skilled in the art at the time of the invention to modify MacNally to teach that the filter control signal comprises a plurality of filter coefficients. One would be motivated to do so since a filter with more than one coefficient performs better than a filter with one coefficient.

17. As per claim 24, MacNally teaches the apparatus according to Claim 13, wherein said at least one A/D converter, said DC offset part, said filter coefficient determiner, and said at least one filter are comprised, at least partially of software (MacNally fig. 6 has input, memory, processor, data storage, etc. which are all elements used in software).

18. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacNally in view of Chalmers 6141372.

19. As per claim 2, MacNally teaches the method according to Claim 1. What MacNally does not teach is wherein said step of processing the signal to produce a first processed signal

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comprises the steps of: splitting the signal into an in-phase (I) channel component and a quadrature-phase (Q) channel component; low pass filtering each of the I channel component and the Q channel component; and decimating each of the I channel component and the Q channel component. What Chalmers 6141372 teaches is wherein said step of processing the signal to produce a first processed signal comprises the steps of: splitting the signal into an in-phase (I) channel component and a quadrature-phase (Q) channel component (Chalmers fig. 5a: 514 and 515 are I and Q components); low pass filtering each of the I channel component and the Q channel component (Chalmers fig. 5a: 501); and decimating each of the I channel component and the Q channel component (Chalmers fig. 5a: 522). It would have been obvious to one skilled in the art at the time of the invention to modify MacNally to teach the filtering and decimation of Chalmers. One would be motivated to do so since MacNally teaches down conversion and anti-aliasing in fig. 2 with elements 200 and 202 and one would want to remove noise beyond the Nyquist frequency.

20. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacNally in view of Norsworthy 5512898.

21. As per claim 4, MacNally teaches the method according to Claim 1. What MacNally does not teach is decimating the third processed signal to produce a fourth processed signal; and forwarding the fourth processed signal for further processing. What Norsworthy 5512898 teaches is decimating the third processed signal to produce a fourth processed signal (Norsworthy fig. 2: decimators inside 306); and forwarding the fourth processed signal for further processing (Norsworthy fig. 2: output of decimators). It would have been obvious to one

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skilled in the art at the time of the invention to modify MacNally to teach the decimators of Norsworthy. One would be motivated to do so for the advantage taught in Norsworthy col. 10 lines 17 to 26 which is to remove noise beyond the Nyquist frequency which is also known as anti-aliasing (when decimation is combined with filtering).

Allowable Subject Matter

22. Claims 5, 14-16, 18-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

23. Claims 7-12, 25-34, 36 are allowed.

24. The following is a statement of reasons for the indication of allowable subject matter: The art of record does not suggest the respective claim combinations together and nor would the respective claim combinations be obvious for claims 7-12 with:

determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal; determining a bandwidth for a channel filter based on the power ratio; and low pass filtering the signal or a derivative of the signal using the channel filter configured responsive to the bandwidth.

25. The art of record does not suggest the respective claim combinations together and nor would the respective claim combinations be obvious for claims 25-34 with:

a second power calculator, said second power calculator adapted for receiving the signal and calculating the power of the signal; and a filter coefficient selector, said filter coefficient

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selector determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal, said filter coefficient selector adapted for determining a bandwidth for a channel filter based on the power ratio and for ascertaining a plurality of filter coefficients based on the bandwidth.

26. The art of record does not suggest the respective claim combinations together and nor would the respective claim combinations be obvious for claim 36 with:

means for determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal; means for determining a bandwidth for a channel filter based on the determined power ratio; means for configuring the channel filter responsive to the determined bandwidth; and means for channel filtering the signal or a derivative of the signal using the configured channel filter.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (703) 305-0194. The examiner can normally be reached on Mon, Tues, Wed and Thurs after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (703) 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PK


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PRIMARY EXAMINER